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MULTIPLE DEVIATIONS OF BOTH LEGS IN A  
RHACHITIC CHILD; OSTEOTOMY OF FIVE  
BONES PERFORMED IN ONE  
SÉANCE; RECOVERY.

BY

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**MULTIPLE DEVIATIONS OF BOTH LEGS IN A  
RHACHITIC CHILD; OSTEOTOMY OF FIVE  
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BY CHARLES GREENE CUMSTON, B.M.S., M.D.,  
OF BOSTON, MASS.;

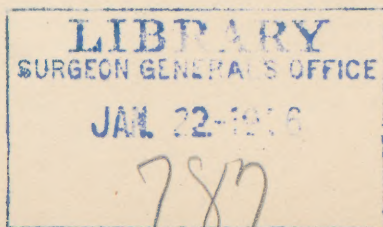
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C. I., ten years of age, entered the Butini Hospital in November, 1890. The father had always been healthy. The mother had had nine children, of which the patient and a brother, fourteen years old, were the only ones living; one child died at the age of eight years, from suppurating glands in the neck; another at the age of three years, from pulmonary tuberculosis, while another, at the age of two and a half years, died in convulsions. The remaining four children were stillborn. The mother's health has always been quite good until the birth of her last child (stillborn), about three years ago, which has left her an invalid, the disease probably being of a nervous nature, affecting the legs; the patellar reflexes are very much exaggerated, especially in the right leg, with great loss of strength in both limbs.

The patient, a little girl, was well developed at birth; she could walk when fifteen months old, but did not

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<sup>1</sup>Surgical Clinic of the Butini Hospital, Geneva, Switzerland.  
Service of Dr. Kummer.

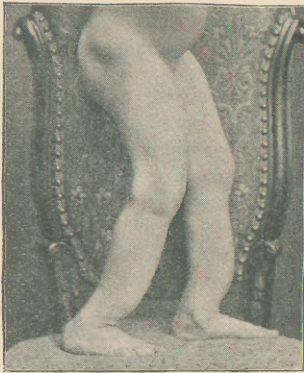


speaking until three years of age, when, after a very severe fright produced by a loud noise, she suddenly exclaimed "Mamma." From this day she continued to talk, but ceased entirely to walk or run. At the time of her fright her legs were perfectly straight and well formed. As the child could no longer walk, she remained in bed for a period of three years, and it was during this time that the legs commenced to deviate. For the three years preceding the operation, that is to say, since 1887, she did not remain constantly in bed, because her parents forced her to get up and walk with the aid of crutches. When about nine years of age she had a cold abscess on the arm, which was opened, and the patient then went to Cannes for the purpose of taking sea-baths, in order to complete the cure for the abscess. When she returned home, after a stay of three months, she was so much improved that she could walk a little without crutches. However, soon after, the legs became still more deformed, and the patient, even with crutches, walked with great difficulty, and the parents now decided to have something radical done.

On admission the thorax was slightly deformed. Above the nipples there existed an excavation in the thoracic frame; nodosities slightly pronounced on the costal epiphyses. Auscultation of the heart and lungs revealed nothing abnormal. The abdomen was normal. The head was large; the cranium squarely built, the parietal protuberances prominent. The teeth presented no signs of rhachitis. Both humeri were larger than normal. Over the left olecranon was seen an old cicatrix caused by the operation for the cold abscess. The submaxillary glands, and those of the left armpit were increased in size. Nothing was noted as to the skin; the subcutaneous tissue was well-developed, as also the muscles; the mucous membranes were of a healthy red. A cicatrix of a former spina ventosa existed on the fourth finger of the right hand. The urine was of a pale-yellow color,

and transparent ; it was not rendered turbid by boiling ; mixed with a solution of acetic acid, the gases produced by the formation of the carbonates were seen to escape, but no turbidity was produced. No albumin or sugar was present ; the reaction was acid, the density 1010. Both legs were found to be greatly deviated, as is shown in Fig. 1. There was a very decided forward curve of both legs, and the right thigh was conspicuous. The curve of the thigh took in about equally the entire femur, while the curve in the legs was localized in a most evident

FIG. 1.



manner in the lower third of both tibia and fibula. The curve was slightly more pronounced on the right than on the left side. There also existed, but very much less pronounced, an external curve in the legs, producing a genu valgum. Neither the tibio-tarsal nor the tibio-femoral epiphyses presented any pathologic condition, excepting that the circumference of the condyles of both femora were projecting and sharply defined. The different articulations were normal, and the active and passive motions were preserved. The child walked

with great difficulty, was obliged to support herself on crutches, was quickly fatigued, and without crutches she could only walk a few steps.

The operation, performed November 18, 1890, consisted in an osteotomy of the tibia and fibula of both legs in their lower third, and an osteotomy of the right femur. Dr. Kummer proceeded in the following manner: An external incision was made over the lower third of the fibula, and then the finger was introduced between the extensor digitorum communis longus muscle and the peroneus brevis muscle, thus separating them, after which they were held apart by an assistant. The periosteum of the fibula was then divided and peeled off the bone, and was pushed aside by an elevator placed on both sides of the fibula. The transverse division of the bone was accomplished by hammer and scissors. The hemorrhage was very slight; the incision was closed by suture; silk being employed for closing this incision, and for all the others as well. The wound was then dressed with iodoform-gauze, over which was placed a thick layer of gauze sterilized by steam under pressure. I would here remark that this is the customary dressing employed by Dr. Kummer in the greater part of his operations when infection is not to be feared. At the same level, an incision was then made over the crest of the tibia; the skin, subcutaneous tissue, aponeurosis, and periosteum were divided. They were then held apart, and a cuneiform excision, with the base situated anteriorly, was made in the tibia. The angle opposite the base corresponded to the angle of flexion of the leg; consequently, after this cuneiform excision, the straightening of the leg was attended with no difficulties. The incision was closed as already described. The same operation was then performed on the other leg, and here also the straightening was very easily accomplished after the cuneiform excision had been made in the lower third of the tibia. Above the articulation of the right knee a

linear osteotomy was then performed on the femur. It was executed after Macewen's method, the only modification being that the line of section was not transverse, but slightly oblique in the upward direction, and from the inner toward the outer side of the bone. The straightening of the thigh was very easy after this operation. The hemorrhage was slight. A plaster-of-Paris dressing was then applied, completely covering the lower extremities from the toes to the pelvis inclusive.

The sequel of the operation was perfectly simple. Once only, five days after the operation, the temperature

FIG. 2.

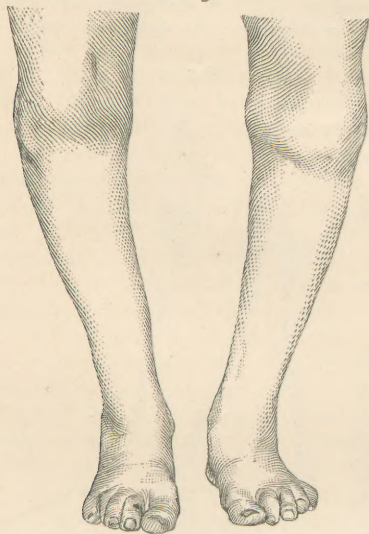


rose to  $38^{\circ}$  C., but declined after an enema. The plaster-of-Paris dressing was allowed to remain until December 28th (forty days), when it was removed, and perfect consolidation of the straightened bones was found to have taken place. Massage, baths and electricity were

now commenced. The patient left the hospital perfectly cured on February 13, 1891, walking without crutches or a cane. She only had a slight deviation of the left leg in the sense of a genu valgum.

We saw the child in February, 1892—that is to say, one year after leaving the hospital. Her mother tells us that the child has been doing well since the operation, and continues to walk without aid. She has been regularly

FIG. 3.



at school, a thing that was impossible before the operation. The parents and the patient declare that they are thoroughly satisfied with the result of the operation. However, the child becomes tired a little more quickly than the average one of her age, and on examination we find that the left-sided genu valgum has slightly increased

since leaving the hospital, while on the right side there also exists some genu valgum, although in a much less degree. On the other hand, the forward deviation of the legs, which was so pronounced before the operation, has absolutely disappeared. (See Figs. 2 and 3.) The general health of the child has also improved considerably, this fact being easily explained by the exercise that the child has in the open air.

I have put this case on record, thinking that it might be interesting as an osteotomy on five bones, performed in one séance, and cured at the end of six weeks by a single plaster-of-Paris dressing, without pain or fever, and with a good result, which is to all appearances a definitive one and is not common.

My thanks are due to my friend Dr. Vallette, who had the kindness to take the second and third photographs.





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